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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,608	07/23/2004	Kangguo Cheng		4607

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MCGUIRE WOODS LLP
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MCLEAN, VA 22102-4215

EXAMINER

REAMES, MATTHEW L

ART UNIT	PAPER NUMBER
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2891

MAIL DATE	DELIVERY MODE
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10/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/710,608

Applicant(s)

CHENG ET AL.

Examiner

Matthew L. Reames

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2007.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 20 and 31-41 is/are pending in the application.
- 4a) Of the above claim(s) 8-12 and 32-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 2-7 is/are allowed.
- 6) ☐ Claim(s) 1, 13, 20 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 31 rejected under 35 U.S.C. 102(e) as being anticipated by Peterson (20030219937).

- a. As to claims 1 and 31 Peterson teaches a patterned substrate(see fig. 1C) where in a device is formed on the strained portion and the relaxed portion (see paragraph 7).
- b. As to claim 13 and 20, Peterson teaches a SiGe or SiGeC which can be interpreted as a doped SiGe:Ge or SiGeC:C.

Allowable Subject Matter

3. Claim 2-7 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments filed 8/1/2007 have been fully considered but they are not persuasive. Applicant's argument that Peterson does not teach a strained device on the strained region and a relaxed device on the relaxed region is found not convincing since Peterson explicitly state the problem being overcome is (paragraph 7):

For example, strained and relaxed structures are used during fabrication of an integrated device in creating high-speed complementary metal-oxide semiconductor (CMOS) circuitry. **Positive channel metal-oxide semiconductor (PMOS) devices with compressively strained layers (e.g. SiGe or SiGeC channels) have the desirable quality of being faster than their silicon counterparts. However, the opposite is true of compressively strained SiGe negative channel metal-oxide semiconductor (NMOS) devices; they are slower than their silicon counterparts. In order to obtain fast NMOS devices, strained Si channels are fabricated over a relaxed (e.g. SiGe or SiGeC) layer (also known as a buffer layer). The integration of both of these types of devices on a common substrate, however, requires that both strained and relaxed SiGe (or SiGeC) layers be present on that substrate.**

Unfortunately, current fabrication techniques do not allow the simultaneous fabrication of both strained and relaxed crystalline, poly-crystalline, and amorphous structures using common fabrication steps.

Peterson invention is as stated in his abstract:

One embodiment of the present invention provides a system for co-fabricating strained and relaxed crystalline, poly-crystalline, and amorphous structures in an integrated circuit device using common fabrication steps. The system operates by first receiving a substrate. The system then fabricates multiple layers on this substrate. A layer within these multiple layers includes both strained structures and relaxed structures. These strained structures and relaxed structures are fabricated simultaneously using common fabrication steps.

From the disclosure of the prior art problems and the disclosure of the Peterson invention it self evident that Peterson wanted to incorporate strained devices and relaxed devices (NMOS and PMOS) on a common substrate (see again paragraph 7).

Therefore all rejections are deemed proper and maintained.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew L. Reames whose telephone number is (571)272-2408. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, B. William Baumeister can be reached on (571)272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MLR

Matthew L. Reames
Matthew L. Reames
Primary Examiner
10/18/07